

**WORK ORDER NUMBER: 17-05-1889***The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For**Client:** Denali Water Solutions**Client Project Name:** Visalia - WM Lyles**Attention:** Chris Marks
2001 West Key Street
Colton, CA 92324-6504

A handwritten signature in black ink, appearing to read "Don Burley".

Approved for release on 05/25/2017 by:
Don Burley
Project Manager

ResultLink ▶

Email your PM ▶

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Work Order Number: 17-05-1889

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Work Order Narrative

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Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 05/24/17. They were assigned to Work Order 17-05-1889.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.



Sample Summary

Client: Denali Water Solutions	Work Order: 17-05-1889
2001 West Key Street	Project Name: Visalia - WM Lyles
Colton, CA 92324-6504	PO Number:
	Date/Time Received: 05/24/17 11:00
	Number of Containers: 6

Attn: Chris Marks

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
1: SB#8 E	17-05-1889-1	05/23/17 13:30	1	Solid
2: SB#8 W	17-05-1889-2	05/23/17 13:35	1	Solid
3: SB#7 E	17-05-1889-3	05/23/17 13:40	1	Solid
4: SB#7 W	17-05-1889-4	05/23/17 13:50	1	Solid
5: SS E	17-05-1889-5	05/23/17 13:55	1	Solid
6: SS W	17-05-1889-6	05/23/17 14:00	1	Solid


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Analytical Report

Denali Water Solutions
 2001 West Key Street
 Colton, CA 92324-6504
 Project: Visalia - WM Lyles

Date Received: 05/24/17
 Work Order: 17-05-1889

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix
1: SB#8 E	17-05-1889-1	05/23/17 13:30	Solid

Parameter	Results	RL	DF	Qualifiers	Units	Date Prepared	Date Analyzed	Method
Solids, Total	37.5	0.100	1.00		%	05/24/17	05/24/17	SM 2540 B (M)
Total Kjeldahl Nitrogen	7900	200	20.0		mg/kg	05/24/17	05/24/17	SM 4500 N Org B (M)
Ammonia (as N)	1700	200	40.0		mg/kg	05/24/17	05/24/17	SM 4500-NH3 B/C (M)
Nitrate (as N)	ND	0.50	1.00		mg/kg	05/24/17	05/24/17	SM 4500-NO3 E/SM 4500-NO2 B

2: SB#8 W	17-05-1889-2	05/23/17 13:35	Solid
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Parameter	Results	RL	DF	Qualifiers	Units	Date Prepared	Date Analyzed	Method
Solids, Total	36.3	0.100	1.00		%	05/24/17	05/24/17	SM 2540 B (M)
Total Kjeldahl Nitrogen	6900	200	20.0		mg/kg	05/24/17	05/24/17	SM 4500 N Org B (M)
Ammonia (as N)	1500	200	40.0		mg/kg	05/24/17	05/24/17	SM 4500-NH3 B/C (M)
Nitrate (as N)	ND	0.50	1.00		mg/kg	05/24/17	05/24/17	SM 4500-NO3 E/SM 4500-NO2 B

3: SB#7 E	17-05-1889-3	05/23/17 13:40	Solid
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Parameter	Results	RL	DF	Qualifiers	Units	Date Prepared	Date Analyzed	Method
Solids, Total	23.4	0.100	1.00		%	05/24/17	05/24/17	SM 2540 B (M)
Total Kjeldahl Nitrogen	3700	200	20.0		mg/kg	05/24/17	05/24/17	SM 4500 N Org B (M)
Ammonia (as N)	1500	200	40.0		mg/kg	05/24/17	05/24/17	SM 4500-NH3 B/C (M)
Nitrate (as N)	ND	0.50	1.00		mg/kg	05/24/17	05/24/17	SM 4500-NO3 E/SM 4500-NO2 B

4: SB#7 W	17-05-1889-4	05/23/17 13:50	Solid
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Parameter	Results	RL	DF	Qualifiers	Units	Date Prepared	Date Analyzed	Method
Solids, Total	30.8	0.100	1.00		%	05/24/17	05/24/17	SM 2540 B (M)
Total Kjeldahl Nitrogen	7000	200	20.0		mg/kg	05/24/17	05/24/17	SM 4500 N Org B (M)
Ammonia (as N)	1600	200	40.0		mg/kg	05/24/17	05/24/17	SM 4500-NH3 B/C (M)
Nitrate (as N)	ND	0.50	1.00		mg/kg	05/24/17	05/24/17	SM 4500-NO3 E/SM 4500-NO2 B

5: SS E	17-05-1889-5	05/23/17 13:55	Solid
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Parameter	Results	RL	DF	Qualifiers	Units	Date Prepared	Date Analyzed	Method
Solids, Total	47.4	0.100	1.00		%	05/24/17	05/24/17	SM 2540 B (M)
Total Kjeldahl Nitrogen	9700	50	5.00		mg/kg	05/24/17	05/24/17	SM 4500 N Org B (M)
Ammonia (as N)	1100	50	10.0		mg/kg	05/24/17	05/24/17	SM 4500-NH3 B/C (M)
Nitrate (as N)	2.9	0.50	1.00		mg/kg	05/24/17	05/24/17	SM 4500-NO3 E/SM 4500-NO2 B

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Denali Water Solutions
2001 West Key Street
Colton, CA 92324-6504
Project: Visalia - WM Lyles

Date Received: 05/24/17
Work Order: 17-05-1889

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix
6: SS W	17-05-1889-6	05/23/17 14:00	Solid

Parameter	Results	RL	DF	Qualifiers	Units	Date Prepared	Date Analyzed	Method
Solids, Total	44.3	0.100	1.00		%	05/24/17	05/24/17	SM 2540 B (M)
Total Kjeldahl Nitrogen	8500	50	5.00		mg/kg	05/24/17	05/24/17	SM 4500 N Org B (M)
Ammonia (as N)	1200	50	10.0		mg/kg	05/24/17	05/24/17	SM 4500-NH3 B/C (M)
Nitrate (as N)	0.63	0.50	1.00		mg/kg	05/24/17	05/24/17	SM 4500-NO3 E/SM 4500-NO2 B

Method Blank	N/A						Solid	
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Parameter	Results	RL	DF	Qualifiers	Units	Date Prepared	Date Analyzed	Method
Solids, Total	ND	0.100	1.00		%	05/24/17	05/24/17	SM 2540 B (M)
Total Kjeldahl Nitrogen	ND	10	1.00		mg/kg	05/24/17	05/24/17	SM 4500 N Org B (M)
Ammonia (as N)	ND	5.0	1.00		mg/kg	05/24/17	05/24/17	SM 4500-NH3 B/C (M)
Nitrate (as N)	ND	0.50	1.00		mg/kg	05/24/17	05/24/17	SM 4500-NO3 E/SM 4500-NO2 B


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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Quality Control - Spike/Spike Duplicate

Denali Water Solutions
2001 West Key Street
Colton, CA 92324-6504

Date Received: 05/24/17
Work Order: 17-05-1889
Preparation: N/A
Method: SM 4500-NO3 E/SM 4500-NO2 B

Project: Visalia - WM Lyles

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
6: SS W	Sample	Solid	UV 7	05/24/17	05/24/17 19:47	H0524NO3S1				
6: SS W	Matrix Spike	Solid	UV 7	05/24/17	05/24/17 19:47	H0524NO3S1				
6: SS W	Matrix Spike Duplicate	Solid	UV 7	05/24/17	05/24/17 19:47	H0524NO3S1				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Nitrate (as N)	0.6255	2.500	3.111	99	3.122	100	70-130	0	0-25	

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RPD: Relative Percent Difference. CL: Control Limits



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Quality Control - Sample Duplicate

Denali Water Solutions
2001 West Key Street
Colton, CA 92324-6504

Date Received: 05/24/17
Work Order: 17-05-1889
Preparation: N/A
Method: SM 2540 B (M)

Project: Visalia - WM Lyles

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
1: SB#8 E	Sample	Solid	N/A	05/24/17 00:00	05/24/17 20:00	H0524TSD3
1: SB#8 E	Sample Duplicate	Solid	N/A	05/24/17 00:00	05/24/17 20:00	H0524TSD3

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Solids, Total	37.50	38.90	4	0-10	

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RPD: Relative Percent Difference. CL: Control Limits



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Quality Control - Sample Duplicate

Denali Water Solutions
2001 West Key Street
Colton, CA 92324-6504

Date Received: 05/24/17
Work Order: 17-05-1889
Preparation: N/A
Method: SM 4500 N Org B (M)

Project: Visalia - WM Lyles

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
17-05-1299-1	Sample	Solid	BUR05	05/24/17 00:00	05/24/17 21:15	H0524TKND1
17-05-1299-1	Sample Duplicate	Solid	BUR05	05/24/17 00:00	05/24/17 21:15	H0524TKND1

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Total Kjeldahl Nitrogen	14160	14250	1	0-25	

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RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

Denali Water Solutions
2001 West Key Street
Colton, CA 92324-6504

Date Received: 05/24/17
Work Order: 17-05-1889
Preparation: N/A
Method: SM 4500-NH3 B/C (M)

Project: Visalia - WM Lyles

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
17-05-1299-1	Sample	Solid	BUR05	05/24/17 00:00	05/24/17 20:15	H0524NH3D1
17-05-1299-1	Sample Duplicate	Solid	BUR05	05/24/17 00:00	05/24/17 20:15	H0524NH3D1

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Ammonia (as N)	3662	3769	3	0-25	

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RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS/LCSD

Denali Water Solutions
2001 West Key Street
Colton, CA 92324-6504

Date Received: 05/24/17
Work Order: 17-05-1889
Preparation: N/A
Method: SM 4500-NO3 E/SM 4500-NO2 B

Project: Visalia - WM Lyles

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-474-951	LCS	Solid	UV 7	05/24/17	05/24/17 19:47	H0524NO3L1
099-12-474-951	LCSD	Solid	UV 7	05/24/17	05/24/17 19:47	H0524NO3L1

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Nitrate (as N)	2.500	2.529	101	2.540	102	80-120	0	0-20	



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RPD: Relative Percent Difference. CL: Control Limits

Sample Analysis Summary Report

Work Order: 17-05-1889

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
SM 2540 B (M)	N/A	1009	N/A	1
SM 4500 N Org B (M)	N/A	1067	BUR05	1
SM 4500-NH3 B/C (M)	N/A	1067	BUR05	1
SM 4500-NO3 E/SM 4500-NO2 B	N/A	650	UV 7	1


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Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 17-05-1889

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<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



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SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: Denali Waters

DATE: 05/24/2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3 (CF: 0.0°C); Temperature (w/o CF): 19.8 °C (w/ CF): 19.8 °C; ☐ Blank ☒ Sample

☒ Sample(s) outside temperature criteria (PM/APM contacted by: 15)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 15

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

Checked by: 15

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

Checked by: 1053

SAMPLE CONDITION:

Yes No N/A

Chain-of-Custody (COC) document(s) received with samples ☒ ☐ ☐

COC document(s) received complete ☐ ☒ ☐
☐ Sampling date ☐ Sampling time ☒ Matrix ☒ Number of containers

☐ No analysis requested ☒ Not relinquished ☒ No relinquished date ☒ No relinquished time

Sampler's name indicated on COC ☒ ☐ ☐

Sample container label(s) consistent with COC ☒ ☐ ☐

Sample container(s) intact and in good condition ☒ ☐ ☐

Proper containers for analyses requested ☒ ☐ ☐

Sufficient volume/mass for analyses requested ☒ ☐ ☐

Samples received within holding time ☒ ☐ ☐

Aqueous samples for certain analyses received within 15-minute holding time

☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen ☐ ☐ ☒

Proper preservation chemical(s) noted on COC and/or sample container ☐ ☐ ☒

Unpreserved aqueous sample(s) received for certain analyses

☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals

Container(s) for certain analysis free of headspace ☐ ☐ ☒
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)

☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)

Tedlar™ bag(s) free of condensation ☐ ☐ ☒

CONTAINER TYPE:

(Trip Blank Lot Number:)

Aqueous: ☐ VOA ☐ VOA_h ☐ VOA_{na} ☐ 100PJ ☐ 100PJ_{na} ☐ 125AGB ☐ 125AGB_h ☐ 125AGB_p ☐ 125PB

☐ 125PB_{znna} ☐ 250AGB ☐ 250CGB ☐ 250CGB_s ☐ 250PB ☐ 250PB_n ☐ 500AGB ☐ 500AGJ ☐ 500AGJ_s
☐ 500PB ☐ 1AGB ☐ 1AGB_{na} ☐ 1AGB_s ☐ 1PB ☐ 1PB_{na} ☐ ☐ ☐ ☐

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve () ☐ EnCores® () ☐ TerraCores® () ☒ 2

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ ☐ Other Matrix (): ☐ ☐

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄, Labeled/Checked by: 1053

s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄·H₂O, znna = Zn (CH₃CO₂)₂ + NaOH

Reviewed by: 718

Donald Burley

From: Chris Marks <chrisamarks@comcast.net>
Sent: Wednesday, May 24, 2017 10:58 AM
To: Donald Burley
Subject: Visalia sample

Don,

We send a sample labeled "Visalia" to you lab yesterday that will arrive today. Can you add the following tests: TKN, nitrate, ammonia?

Thanks,

Chris Marks
Denali Water Solutions

Notify us [here](#) to report this email as spam.

